Application No. 09/554,414 Response to Office Action March 15, 2005

## Amendments to the Claims:

The following listing of claims replaces all prior versions, and listings, of claims in the application:

## **Listings of Claims:**

1-31. (Cancelled)

32. (Currently Amended) A method of inhibition of tumorigenesis wherein production of DNA demethylase is increased in comparison with that of a non-tumor cell comprising the step of administering to a patient in need thereof a therapeutically effective amount of altering a methylation activity of DNA demethylase comprising amino acids 150-411 of SEQ ID NO.2, the method comprising inhibiting DNA demethylase with an antagonist or inhibitor of DNA demethylase, thereby altering a methylation pattern in DNA, said DNA demethylase being selected from the group consisting of comprising amino acids 150-411 of SEQ ID NO:2, SEQ ID NO:4, SEQ ID NO:6 and SEQ ID NO:8 selected from the group consisting of a double stranded CmG oligonucleotide, an anti-DNA demethylase antibody, an antisense oligonucleotide of DNA demethylase, imidazole and derivatives of imidazole.

33. (Previously presented) The method according to claim 32, wherein said antagonist is a double stranded C<sup>m</sup>G oligonucleotide that inhibits DNA demethylase at a Ki of 50nM.

34. (Previously presented) The method according to claim 33, wherein said oligonucleotide is:

35-40. (Canceled)

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- 41. (New) The method according to claim 32, wherein said antagonist is an anti-DNA demethylase antibody.
  - 42. (New) The method according to claim 32, wherein said antagonist is an antisense oligonucleotide of DNA demethylase.

- 43. (New) The method according to claim 32, wherein said antagonist is imidazole.
- 44. (New) The method according to claim 32, wherein said antagonist is a derivative of imidazole.